APPENDIX B

(Listing of All Pending Claims After Amendment)

8. (New) A device for determining changes of the density of a medium comprising:

a transmitting device for the emission of a send signal, said send signal having a constant frequency and amplitude and a minimum of one period, with the transmitting device being coupled to the medium for reflecting the send signal from the medium as a response signal, said response signal being the signal reflected when the send signal encounters the medium;

at least one receiver unit for receiving the response signal from the medium;

an A/D converter and a sampling unit coupled to each of the receiver units, said A/D converter and sampling unit converting the response signal into an A/D converter output, wherein the transmitting device and the A/D converter output are linked to a numerical processing unit for detecting and outputting the phase shift between the send signal and the response signal.

9. (New) The device of claim 8, wherein output from the numerical processing unit is coupled to a reporting device.

10. (New) The device of claim 9, wherein the reporting device is a computer display unit.

11. (New) The device of claim 9, wherein the reporting device is a memory unit that stores the output from the numerical processing unit.

12. (New) The device of claim 8, wherein the send signal has a sine shape.

13. (New) The device of claim 12, wherein the send signal is an acoustic signal.

14. (New) The device of claim 8, wherein the transmitting device is configured to transmit two send signals.

15. (New) The device of claim 14, wherein the transmitting device is configured to transmit two send signals simultaneously.

16. (New) The device of claim 14, wherein each of the two send signals has a constant frequency and amplitude.

17. (New) The device of claim 16, wherein the transmitting device and receiver unit are coupled to identical channels in which the signals are conditioned and filtered.

18. (New) The device of claim 14, wherein each of the two send signals has a different frequency from the other, with a signal propagation time of the two send signals differing by a maximum of one period.

19. (New) The device of claim 8, wherein the transmitting device and receiver unit are formed as a single convertible sensor.

20. (New) The device of claim 19, wherein the length of the send signal is at most equal to twice the distance between the sensor and a reflection point on the medium, the reflection point being the point where the send signal reflects off of the medium.